Republic of Iraq
Ministry of Higher Education and Scientific Research
Baghdad University
College of Education Ibn Rushd for human Sciences
Dept. of Geography

The Effect of Climatic Water Budget on The Investment of Water Resources in the Governorate of Mayssan

A Dissertation Submitted by

Intisar Qassim Hussein

To

The Council of the College of Education for human Sciences Ibn Rushd, Baghdad University in partial fulfilment of the requirements for the Degree of Doctor in Philosophy Geography

Supervised by

Prof. Dr. Fadhil Baqir Al-Hussein

2014 A.D. **1435 A.H.**

Abstract

The present study aims at identifying the effect of climate in the governorate through the use of water climate balance and identifying their result on the investment of water resources in the governorate. In order to achieve this, the research must collect information, data and maps that are related to the topic of this study through reviewing some of directorates of water resources, agriculture, environment, area and the Central Body of Census and Weather Forecast in Baghdad and Mayssan. In order to complete the information obtained in the theoretical side, field visits were necessary in order to know the nature of area and to measure the level of water and collect data about the groundwater. The climate features of the governorate were studied through specifying the temperature, wind, rainfall, humidity, and evaporation. The study shows that temperature is very hot, and rainfall and evaporation is high in the water surfaces.

In the light of the information given, and according to the water climate depending on the use of Najeeb Kharoufa's and Thornthoyt's and Ivanov's and Penman Methods depending on other three methods to extract the actual of rainfall value, which are Lange Method and Silkhorim'smethods andIvanov method and Kossen Aridity and Walter monthly and there is water shortage and flux in three months (December, January, February) which is Thornthoyt's. The feeding of the ground water tanks in the Stations of Ammarah and Ali Al-Gharbiwhich amounted ($115.5371*10^6$, $362.355* 10^6$).

Depending on rainfall of the area and the level of the water surplus derived from the amount of the surplus climate water balance, depending on the calculation of the water surface flow which was amounted in the two stations of Al-Ammara and Al-Agharbi to (5.8, 6.2) respectively.

The study showed the existence of spatial variance, in addition to the natural and chemical features of these water resources. The variance in the discharge and levels and types of water and the type of water mentioned which in general and discharge, and the salinity decrease in winter and increase in summer. Thus, the climate effect in counting, and there arewater surpluses that do not coincide with the size of the required water investment.The annual average of water deficit reaches to (2683.6-, 2542.05-) mm for the two stations of Al-Ammara and Ali Al-Agharbi respectively. The water surplus achieved is little not in proportion with the size of the required water investment. The total volume of waterinvestment amounted to (6700304992) m3/year equals to (6.700304992) billion m3 in the governorate.

As a natural result of what is mentioned, the effects of climatic situation in water investment of the available as investment expand in humid months and decrease in dry month.

By making a comparison between the size of water investment of the three mentioned and the size of the amount of the water resource discharge through the extraction of the water consumption in the governorate which showed that the required amount of water is not in concordance with the amount of discharge of the main water resource nor with the water obtained from the rainfall of the government.